

Problems In Physical Chemistry Gurdeep Raj

Handbook of Remediation for Complex Environmental Problems
 Spectroscopy
 Analytical Chemistry
 Modern Inorganic Chemistry
 Advanced Physical Chemistry
 Advanced Inorganic Chemistry - Volume II
 Advanced Inorganic Chemistry Vol-1
 Synthetic Organic Chemistry: (For Honours & Post-Graduate Students of Various Universities)
 Advances Practical Organic Chemistry
 Inorganic Chemistry
 Principles of Colloid and Surface Chemistry
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 Group theory and Symmetry in Chemistry
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Handbook of Remediation for Complex Environmental Problems Krishna Prakashan Media
 This text teaches the principles underlying modern chemical kinetics in a clear, direct fashion, using several examples to enhance basic understanding. It features solutions to selected problems, with separate sections and appendices that cover more technical applications. Each chapter is self-contained and features an introduction that identifies its basic goals, their significance, and a general plan for their achievement. This text's important aims are to demonstrate that the basic kinetic principles are essential to the solution of modern chemical problems, and to show how the underlying question — "How do chemical reactions occur?" — leads to exciting, vibrant fields of modern research. The first aim is achieved by using relevant examples in presenting the basic material, and the second is attained by inclusion of chapters on surface processes, photochemistry, and reaction dynamics.
[Spectroscopy](#) Krishna Prakashan Media

Written primarily to meet the requirements of students at the undergraduate level, this book aims for a self-learning approach. The fundamentals of physical chemistry have been explained with illustrations, diagrams, tables, experimental techniques and solved problems.

Analytical Chemistry S. Chand Publishing

Now in its fifth edition, Housecroft & Sharpe's Inorganic Chemistry, continues to provide an engaging, clear and comprehensive introduction to core physical-inorganic principles. This widely respected and internationally renowned textbook introduces the descriptive chemistry of the elements and the role played by inorganic chemistry in our everyday lives. The stunning full-colour design has been further enhanced for this edition with an abundance of three-dimensional molecular and protein structures and photographs, bringing to life the world of inorganic chemistry. Updated with the latest research, this edition also includes coverage relating to the extended periodic table and new approaches to estimating lattice energies and to bonding classifications of organometallic compounds. A carefully developed pedagogical approach guides the reader through this fascinating subject with features designed to encourage thought and to help students consolidate their understanding and learn how to apply their understanding of key

concepts within the real world. Features include: · Thematic boxed sections with a focus on areas of Biology and Medicine, the Environment, Applications, and Theory engage students and ensure they gain a deep, practical and topical understanding · A wide range of in-text self-study exercises including worked examples, reflective questions and end of chapter problems aid independent study · Definition panels and end-of-chapter checklists provide students with excellent revision aids · Striking visuals throughout the book have been carefully crafted to illustrate molecular and protein structures and to entice students further into the world of inorganic chemistry Inorganic Chemistry 5th edition is also accompanied by an extensive companion website, available at www.pearsoned.co.uk/housecroft . This features multiple choice questions and rotatable 3D molecular structures.

Modern Inorganic Chemistry Krishna Prakashan Media

Mathematics for Physical Chemistry, Third Edition, is the ideal text for students and physical chemists who want to sharpen their mathematics skills. It can help prepare the reader for an undergraduate course, serve as a supplementary text for use during a course, or serve as a reference for graduate students and practicing chemists. The text concentrates on applications

instead of theory, and, although the emphasis is on physical chemistry, it can also be useful in general chemistry courses. The Third Edition includes new exercises in each chapter that provide practice in a technique immediately after discussion or example and encourage self-study. The first ten chapters are constructed around a sequence of mathematical topics, with a gradual progression into more advanced material. The final chapter discusses mathematical topics needed in the analysis of experimental data. Numerous examples and problems interspersed throughout the presentations. Each extensive chapter contains a preview, objectives, and summary. Includes topics not found in similar books, such as a review of general algebra and an introduction to group theory. Provides chemistry specific instruction without the distraction of abstract concepts or theoretical issues in pure mathematics.

Advanced Physical Chemistry S. Chand Publishing

A Textbook for B.Sc. (Part III and Hons.) and Postgraduate Courses of Indian Universities. In this edition, I have made major changes in the light of modern concepts introduced in syllabi at the under-graduate and postgraduate level as well. With matter has also been updated. The subject matter has been arranged systematically, in a lucid style and simple language. New Problems and exercises have also been introduced to acquaint the students with trend of questions they expect in the examinations.

Advanced Inorganic Chemistry - Volume II Dalal Institute

For more than a quarter century, Cotton and Wilkinson's Advanced Inorganic Chemistry has been the source that students and professional chemists have turned to for the background needed to understand current research literature in inorganic chemistry and aspects of organometallic chemistry. Like its predecessors, this updated Sixth Edition is organized around the periodic table of elements and provides a systematic treatment of the chemistry of all chemical elements and their compounds. It incorporates important recent developments with an emphasis on advances in the interpretation of structure, bonding, and reactivity. From the reviews of the Fifth Edition: "The first place to go when seeking general information about the chemistry of a particular element, especially when up-to-date, authoritative information is desired." —Journal of the American Chemical Society "Every student with a serious interest in inorganic chemistry should have [this book]." —Journal of Chemical Education "A mine of information . . . an invaluable guide." —Nature "The standard by which all other inorganic chemistry books are judged." —Nouveau Journal de Chimie "A masterly overview of the chemistry of the elements." —The Times of London Higher Education Supplement "A bonanza of information on important results and developments which could otherwise easily be overlooked in the general deluge of publications." —Angewandte Chemie

Advanced Inorganic Chemistry Vol-1 John Wiley & Sons

This text teaches the principles underlying modern chemical kinetics in a clear, direct fashion, using several examples to enhance basic understanding. Solutions to selected problems. 2001 edition. /div

Synthetic Organic Chemistry: (For Honours & Post-Graduate Students of Various Universities)

Problems in Physical Chemistry

Fully updated and expanded to reflect recent advances, this Fourth Edition of the classic text provides students and professional chemists with an excellent introduction to the principles and general properties of organometallic compounds, as well as including practical information on reaction mechanisms and detailed descriptions of contemporary applications.

Advances Practical Organic Chemistry Krishna Prakashan Media

Problems in Physical Chemistry Krishna Prakashan Media Advanced Physical Chemistry S. Chand Publishing

Inorganic Chemistry Courier Corporation

Essentials of Physical Chemistry is a classic textbook on the subject explaining fundamentals concepts with discussions, illustrations and exercises. With clear explanation, systematic presentation, and scientific accuracy, the book not only helps the students clear misconceptions about the basic concepts but also enhances students' ability to analyse and systematically solve problems. This bestseller is primarily designed for B.Sc. students and would equally be useful for the aspirants of medical and engineering entrance examinations.

Principles of Colloid and Surface Chemistry Krishna Prakashan Media

Advanced Inorganic Chemistry - Volume II is a concise book on basic concepts of inorganic chemistry. Beginning with Coordination Chemistry, it presents a systematic treatment of all Transition and Inner-Transition chemical elements and their compounds according to the periodic

table. Special topics such as Pollution and its adverse effects, chromatography, use of metal ions in biological systems, to name a few, are discussed to provide additional relevant information to the students. It primarily caters to the undergraduate courses (Pass and Honours) offered in Indian universities.

Reactions and Reagents Krishna Prakashan Media

This book is specially designed for B.Sc. Chemistry Honours Degree students. However, it is believed to be helpful to post-graduate students also. It covers by and large physical chemistry part of the Chemistry Honours syllabus taught in different Indian Universities. Elaborate and lucid discussion of each chapter is the strength of this book. Questions and numerical problems are also included at the end of almost every chapter. Strenuous effort has been given to derive different mathematical equations as well as to handle quantum mechanics using mathematics taught in undergraduate level. The book contains 20 chapters, covering the following topics: -

Thermodynamics is thoroughly discussed in this book, covering 1st law, 2nd law and 3rd law of thermodynamics, their applications, thermochemistry and its applications. Applications of thermodynamics in different areas like refrigerators, compressors, power plants, IC engines etc. are also discussed. Statistical thermodynamics is also discussed elaborately. - Chemical kinetics is another important part of chemistry since it covers reaction rate, order of a reaction, theory behind the reaction rate etc. Catalyst is also an important aspect since it has profound influence on reaction rate. Type of catalyst and mechanism of different catalyzed reactions are discussed in detail. A chemical reaction reaches an equilibrium state if carried out in a closed container. However, the equilibrium is sufficiently influenced by other parameters, like pressure, temperature etc. - Different physical states of matter (gaseous state, liquid state and solid state). In the solid state behavior of conductors and semiconductors are discussed thoroughly using quantum mechanics. - Detailed discussion of electrochemistry, electrochemical cell and ionic equilibria is another important aspect of this book. Application of thermodynamics in electrochemical cell is also discussed. Concept of buffer solutions, pH and indicators are discussed in detail. - Phase equilibria is another important part of physical chemistry. The chapter includes details of phase rule, phase diagram, applications, different types of heterogeneous equilibrium system etc. - Colligative properties of dilute solutions are well documented, covering, Henry's law, Raoult's law of lowering of vapour pressure, elevation of boiling point, depression of freezing point, osmotic pressure etc. - Surface chemistry and properties of colloidal solutions are very much important in different chemical industries. These two sections are well discussed in this book. It includes details of derivation of different laws, theories behind the adsorption, stability of colloidal solutions etc. - Nuclear reactions are different from chemical reactions and energy, related to nuclear reactions is enormous, much higher than any chemical reaction. Study of different nuclear reactions including natural radioactivity, artificial radioactivity etc. and kinetics of nuclear reactions are well discussed in this book. Different areas of applications of nuclear reactions are also covered in this book. - Another important aspect of chemical reactions is chemical bonding. The book covers details of covalent bonding including quantum numbers, overlapping of atomic orbitals, molecular orbitals. Besides that ionic bonding and other types of bonding are also discussed in detail. - Photochemical reactions are different from chemical reactions. Light energy is the main source of photochemical reactions. Details of it including photochemical laws, mechanism etc. are well documented in this book.

Series Analytical Geometry Krishna Prakashan Media

The rapid pace of industrialization and its resulting by-products have affected the environment by producing hazardous wastes, which have been released into the environment. Environmental pollution is a global menace, the magnitude of which is increasing day-by-day due to urbanization, heavy industrialization, and changing lifestyles. Nanostructures as functional building blocks are an ideal candidate for investigation into the dependence of structural, optical, electrical, and magnetic properties of the quantum confinement effect and morphology, which paves the way for novel nanotechnological applications. Both physical and chemical properties of nanostructures are associated with their size, shape, and dimensionality; therefore, morphology controlled synthesis of functional nanostructures gains importance from a scientific and technological perspective. Semiconductor nanomaterials at the nanoscale are gaining significant attention in the areas of energy conversion and storage, sensing, electronics, photonics, and biomedicine. In this book, we discuss semiconducting metal oxide nanostructures like TiO₂, ZnO, conducting polymers and nanocomposites for their efficient detection of harmful and toxic chemicals, and nanomaterials for photocatalytic degradation, with an emphasis on the applications of semiconducting materials

for renewable energy. The book includes a brief literature survey, properties and the latest research advances in the development of various metal oxide nanostructures, and how nanocomposites and conducting polymer based nanomaterials are efficient for environmental remediation. The application of nanomaterials in the detection and removal of pathogens provides greater sensitivity, lower cost, shorter turn-around times, smaller sample sizes, in-line and real-time detection, as well as higher throughput and portability in environmental remediation. Furthermore, semiconductor photocatalysis for remediation has real potential for combating water pollution. This book provides a comprehensive look at the morphological, structural, crystalline, optical, electrical, and electrochemical properties of semiconducting metal oxides and their applications for environmental cleaning. The preparation and modification of semiconducting nanomaterials could be promising for the reliable and effective detection of harmful chemicals, and renewable energy.

Advanced Inorganic Chemistry: Volume II Krishna Prakashan Media

This book is a fruitful outcome of this feeling. Besides M. Sc. students, this book will be useful to those students who are preparing for NET (CSIR), SLET, IAS, PCS and other competitive examinations. This text includes various types of analytical techniques. Every technique included in this text is self-sufficient in itself. Every concept has been demonstrated by simple diagrams using simple mathematics and elegant style.

Group theory and Symmetry in Chemistry Krishna Prakashan Media

An advanced-level textbook of inorganic chemistry for the graduate (B.Sc) and postgraduate (M.Sc) students of Indian and foreign universities. This book is a part of four volume series, entitled "A Textbook of Inorganic Chemistry - Volume I, II, III, IV". CONTENTS: Chapter 1. Stereochemistry and Bonding in Main Group Compounds: VSEPR theory, $d\pi-p\pi$ bonds, Bent rule and energetic of hybridization. Chapter 2. Metal-Ligand Equilibria in Solution: Stepwise and overall formation constants and their interactions, Trends in stepwise constants, Factors affecting stability of metal complexes with reference to the nature of metal ion and ligand, Chelate effect and its thermodynamic origin, Determination of binary formation constants by pH-metry and spectrophotometry. Chapter 3. Reaction Mechanism of Transition Metal Complexes - I: Inert and labile complexes, Mechanisms for ligand replacement reactions, Formation of complexes from aquo ions, Ligand displacement reactions in octahedral complexes- acid hydrolysis, Base hydrolysis, Racemization of tris chelate complexes, Electrophilic attack on ligands. Chapter 4. Reaction Mechanism of Transition Metal Complexes - II: Mechanism of ligand displacement reactions in square planar complexes, The trans effect, Theories of trans effect, Mechanism of electron transfer reactions - types; Outer sphere electron transfer mechanism and inner sphere electron transfer mechanism, Electron exchange. Chapter 5. Isopoly and Heteropoly Acids and Salts: Isopoly and Heteropoly acids and salts of Mo and W: structures of isopoly and heteropoly anions. Chapter 6. Crystal Structures: Structures of some binary and ternary compounds such as fluorite, antiferite, rutile, antirutile, cristobalite, layer lattices- CdI₂, BiI₃; ReO₃, Mn₂O₃, corundum, perovskite, Ilmenite and Calcite. Chapter 7. Metal-Ligand Bonding: Limitation of crystal field theory, Molecular orbital theory, octahedral, tetrahedral or square planar complexes, π -bonding and molecular orbital theory. Chapter 8. Electronic Spectra of Transition Metal Complexes: Spectroscopic ground states, Correlation and spin-orbit coupling in free ions for 1st series of transition metals, Orgel and Tanabe-Sugano diagrams for transition metal complexes ($d1 - d9$ states), Calculation of Dq , B and β parameters, Effect of distortion on the d-orbital energy levels, Structural evidence from electronic spectrum, Jahn-Teller effect, Spectrochemical and nephelauxetic series, Charge transfer spectra, Electronic spectra of molecular addition compounds. Chapter 9. Magnetic Properties of Transition Metal Complexes: Elementary theory of magneto-chemistry, Guoy's method for determination of magnetic susceptibility, Calculation of magnetic moments, Magnetic properties of free ions, Orbital contribution, effect of ligand-field, Application of magneto-chemistry in structure determination, Magnetic exchange coupling and spin state cross over. Chapter 10. Metal Clusters: Structure and bonding in higher boranes, Wade's rules, Carboranes, Metal Carbonyl Clusters - Low Nuclearity Carbonyl Clusters, Total Electron Count (TEC). Chapter 11. Metal- π Complexes: Metal carbonyls, structure and bonding, Vibrational spectra of metal carbonyls for bonding and structure elucidation, Important reactions of metal carbonyls; Preparation, bonding, structure and important reactions of transition metal nitrosyl, dinitrogen and dioxygen complexes; Tertiary phosphine as ligand.

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